

SEQUENCE LISTING

<110> Daiichi Suntory Pharma Co., Ltd.

<120> Method for expansion of pluripotent stem cells

<130> DSTY-R678/PCT (fP05-02W0-1)

<160> 24

<170> PatentIn version 3.1

<210> 1

<211> 882

<212> PRT

<213> Human E-cadherin

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<222> (157)..(262)

<223> EC1

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<222> (265)..(375)

<223> EC2

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<222> (487)..(595)
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<222> (596)..(700)
<223> EC5

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Val Ser Ser Trp Leu Cys Gln Glu Pro Glu Pro Cys His Pro Gly Phe
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Asp Ala Glu Ser Tyr Thr Phe Thr Val Pro Arg Arg His Leu Glu Arg
35 40 45

Gly Arg Val Leu Gly Arg Val Asn Phe Glu Asp Cys Thr Gly Arg Gln
50 55 60

Arg Thr Ala Tyr Phe Ser Leu Asp Thr Arg Phe Lys Val Gly Thr Asp
65 70 75 80

Gly Val Ile Thr Val Lys Arg Pro Leu Arg Phe His Asn Pro Gln Ile
85 90 95

His Phe Leu Val Tyr Ala Trp Asp Ser Thr Tyr Arg Lys Phe Ser Thr
100 105 110

Lys Val Thr Leu Asn Thr Val Gly His His His Arg Pro Pro Pro His
115 120 125

Gln Ala Ser Val Ser Gly Ile Gln Ala Glu Leu Leu Thr Phe Pro Asn
130 135 140

Ser Ser Pro Gly Leu Arg Arg Gln Lys Arg Asp Trp Val Ile Pro Pro
145 150 155 160

Ile Ser Cys Pro Glu Asn Glu Lys Gly Pro Phe Pro Lys Asn Leu Val
165 170 175

Gln Ile Lys Ser Asn Lys Asp Lys Glu Gly Lys Val Phe Tyr Ser Ile
180 185 190

Thr Gly Gln Gly Ala Asp Thr Pro Pro Val Gly Val Phe Ile Ile Glu
195 200 205

Arg Glu Thr Gly Trp Leu Lys Val Thr Glu Pro Leu Asp Arg Glu Arg
210 215 220

Ile Ala Thr Tyr Thr Leu Phe Ser His Ala Val Ser Ser Asn Gly Asn
225 230 235 240

Ala Val Glu Asp Pro Met Glu Ile Leu Ile Thr Val Thr Asp Gln Asn
245 250 255

Asp Asn Lys Pro Glu Phe Thr Gln Glu Val Phe Lys Gly Ser Val Met
260 265 270

Glu Gly Ala Leu Pro Gly Thr Ser Val Met Glu Val Thr Ala Thr Asp
275 280 285

Ala Asp Asp Asp Val Asn Thr Tyr Asn Ala Ala Ile Ala Tyr Thr Ile
290 295 300

Leu Ser Gln Asp Pro Glu Leu Pro Asp Lys Asn Met Phe Thr Ile Asn
305 310 315 320

Arg Asn Thr Gly Val Ile Ser Val Val Thr Thr Gly Leu Asp Arg Glu
325 330 335

Ser Phe Pro Thr Tyr Thr Leu Val Val Gln Ala Ala Asp Leu Gln Gly
340 345 350

Glu Gly Leu Ser Thr Thr Ala Thr Ala Val Ile Thr Val Thr Asp Thr
355 360 365

Asn Asp Asn Pro Pro Ile Phe Asn Pro Thr Thr Tyr Lys Gly Gln Val
370 375 380

Pro Glu Asn Glu Ala Asn Val Val Ile Thr Thr Leu Lys Val Thr Asp
385 390 395 400

Ala Asp Ala Pro Asn Thr Pro Ala Trp Glu Ala Val Tyr Thr Ile Leu
405 410 415

Asn Asp Asp Gly Gly Gln Phe Val Val Thr Thr Asn Pro Val Asn Asn
420 425 430

Asp Gly Ile Leu Lys Thr Ala Lys Gly Leu Asp Phe Glu Ala Lys Gln
435 440 445

Gln Tyr Ile Leu His Val Ala Val Thr Asn Val Val Pro Phe Glu Val
450 455 460

Ser Leu Thr Thr Ser Thr Ala Thr Val Thr Val Asp Val Leu Asp Val
465 470 475 480

Asn Glu Ala Pro Ile Phe Val Pro Pro Glu Lys Arg Val Glu Val Ser
485 490 495

Glu Asp Phe Gly Val Gly Gln Glu Ile Thr Ser Tyr Thr Ala Gln Glu
500 505 510

Pro Asp Thr Phe Met Glu Gln Lys Ile Thr Tyr Arg Ile Trp Arg Asp
515 520 525

Thr Ala Asn Trp Leu Glu Ile Asn Pro Asp Thr Gly Ala Ile Ser Thr
530 535 540

Arg Ala Glu Leu Asp Arg Glu Asp Phe Glu His Val Lys Asn Ser Thr
545 550 555 560

Tyr Thr Ala Leu Ile Ile Ala Thr Asp Asn Gly Ser Pro Val Ala Thr
565 570 575

Gly Thr Gly Thr Leu Leu Leu Ile Leu Ser Asp Val Asn Asp Asn Ala
580 585 590

Pro Ile Pro Glu Pro Arg Thr Ile Phe Phe Cys Glu Arg Asn Pro Lys
595 600 605

Pro Gln Val Ile Asn Ile Ile Asp Ala Asp Leu Pro Pro Asn Thr Ser
610 615 620

Pro Phe Thr Ala Glu Leu Thr His Gly Ala Ser Ala Asn Trp Thr Ile
625 630 635 640

Gln Tyr Asn Asp Pro Thr Gln Glu Ser Ile Ile Leu Lys Pro Lys Met
645 650 655

Ala Leu Glu Val Gly Asp Tyr Lys Ile Asn Leu Lys Leu Met Asp Asn
660 665 670

Gln Asn Lys Asp Gln Val Thr Thr Leu Glu Val Ser Val Cys Asp Cys
675 680 685

Glu Gly Ala Ala Gly Val Cys Arg Lys Ala Gln Pro Val Glu Ala Gly
690 695 700

Leu Gln Ile Pro Ala Ile Leu Gly Ile Leu Gly Gly Ile Leu Ala Leu
705 710 715 720

Leu Ile Leu Ile Leu Leu Leu Leu Leu Phe Leu Arg Arg Arg Ala Val
725 730 735

Val Lys Glu Pro Leu Leu Pro Pro Glu Asp Asp Thr Arg Asp Asn Val
740 745 750

Tyr Tyr Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp Phe Asp
755 760 765

Leu Ser Gln Leu His Arg Gly Leu Asp Ala Arg Pro Glu Val Thr Arg
770 775 780

Asn Asp Val Ala Pro Thr Leu Met Ser Val Pro Arg Tyr Leu Pro Arg
785 790 795 800

Pro Ala Asn Pro Asp Glu Ile Gly Asn Phe Ile Asp Glu Asn Leu Lys
805 810 815

Ala Ala Asp Thr Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu Leu Val
820 825 830

Phe Asp Tyr Glu Gly Ser Gly Ser Glu Ala Ala Ser Leu Ser Ser Leu
835 840 845

Asn Ser Ser Glu Ser Asp Lys Asp Gln Asp Tyr Asp Tyr Leu Asn Glu
850 855 860

Trp Gly Asn Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Glu
865 870 875 880

Asp Asp

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<212> PRT
<213> Mouse E-cadherin

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<222> (159)..(264)
<223> EC1

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<222> (380)..(488)

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<222> (489)..(597)

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<223> EC5

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Val Ser Ser Trp Leu Cys Gln Glu Leu Glu Pro Glu Ser Cys Ser Pro
20 25 30

Gly Phe Ser Ser Glu Val Tyr Thr Phe Pro Val Pro Glu Arg His Leu
35 40 45

Glu Arg Gly His Val Leu Gly Arg Val Arg Phe Glu Gly Cys Thr Gly
50 55 60

Arg Pro Arg Thr Ala Phe Phe Ser Glu Asp Ser Arg Phe Lys Val Ala
65 70 75 80

Thr Asp Gly Thr Ile Thr Val Lys Arg His Leu Lys Leu His Lys Leu
85 90 95

Glu Thr Ser Phe Leu Val Arg Ala Arg Asp Ser Ser His Arg Glu Leu
100 105 110

Ser Thr Lys Val Thr Leu Lys Ser Met Gly His His His His Arg His
115 120 125

His His Arg Asp Pro Ala Ser Glu Ser Asn Pro Glu Leu Leu Met Phe
130 135 140

Pro Ser Val Tyr Pro Gly Leu Arg Arg Gln Lys Arg Asp Trp Val Ile
145 150 155 160

Pro Pro Ile Ser Cys Pro Glu Asn Glu Lys Gly Glu Phe Pro Lys Asn
165 170 175

Leu Val Gln Ile Lys Ser Asn Arg Asp Lys Glu Thr Lys Val Phe Tyr
180 185 190

Ser Ile Thr Gly Gln Gly Ala Asp Lys Pro Pro Val Gly Val Phe Ile
195 200 205

Ile Glu Arg Glu Thr Gly Trp Leu Lys Val Thr Gln Pro Leu Asp Arg
210 215 220

Glu Ala Ile Ala Lys Tyr Ile Leu Tyr Ser His Ala Val Ser Ser Asn
225 230 235 240

Gly Glu Ala Val Glu Asp Pro Met Glu Ile Val Ile Thr Val Thr Asp
245 250 255

Gln Asn Asp Asn Arg Pro Glu Phe Thr Gln Pro Val Phe Glu Gly Phe
260 265 270

Val Ala Glu Gly Ala Val Pro Gly Thr Ser Val Met Lys Val Ser Ala
275 280 285

Thr Asp Ala Asp Asp Asp Val Asn Thr Tyr Asn Ala Ala Ile Ala Tyr
290 295 300

Thr Ile Val Ser Gln Asp Pro Glu Leu Pro His Lys Asn Met Phe Thr
305 310 315 320

Val Asn Arg Asp Thr Gly Val Ile Ser Val Leu Thr Ser Gly Leu Asp
325 330 335

Arg Glu Ser Tyr Pro Thr Tyr Thr Leu Val Val Gln Ala Ala Asp Leu
340 345 350

Gln Gly Glu Gly Leu Ser Thr Thr Ala Lys Ala Val Ile Thr Val Lys
355 360 365

Asp Ile Asn Asp Asn Ala Pro Val Phe Asn Pro Ser Thr Tyr Gln Gly
370 375 380

Gln Val Pro Glu Asn Glu Val Asn Ala Arg Ile Ala Thr Leu Lys Val
385 390 395 400

Thr Asp Asp Asp Ala Pro Asn Thr Pro Ala Trp Lys Ala Val Tyr Thr
405 410 415

Val Val Asn Asp Pro Asp Gln Gln Phe Val Val Val Thr Asp Pro Thr
420 425 430

Thr Asn Asp Gly Ile Leu Lys Thr Ala Lys Gly Leu Asp Phe Glu Ala
435 440 445

Lys Gln Gln Tyr Ile Leu His Val Arg Val Glu Asn Glu Glu Pro Phe
450 455 460

Glu Gly Ser Leu Val Pro Ser Thr Ala Thr Val Thr Val Asp Val Val
465 470 475 480

Asp Val Asn Glu Ala Pro Ile Phe Met Pro Ala Glu Arg Arg Val Glu
485 490 495

Val Pro Glu Asp Phe Gly Val Gly Gln Glu Ile Thr Ser Tyr Thr Ala
500 505 510

Arg Glu Pro Asp Thr Phe Met Asp Gln Lys Ile Thr Tyr Arg Ile Trp
515 520 525

Arg Asp Thr Ala Asn Trp Leu Glu Ile Asn Pro Glu Thr Gly Ala Ile
530 535 540

Phe Thr Arg Ala Glu Met Asp Arg Glu Asp Ala Glu His Val Lys Asn
545 550 555 560

Ser Thr Tyr Val Ala Leu Ile Ile Ala Thr Asp Asp Gly Ser Pro Ile
565 570 575

Ala Thr Gly Thr Gly Thr Leu Leu Leu Val Leu Leu Asp Val Asn Asp
580 585 590

Asn Ala Pro Ile Pro Glu Pro Arg Asn Met Gln Phe Cys Gln Arg Asn
595 600 605

Pro Gln Pro His Ile Ile Thr Ile Leu Asp Pro Asp Leu Pro Pro Asn
610 615 620

Thr Ser Pro Phe Thr Ala Glu Leu Thr His Gly Ala Ser Val Asn Trp
625 630 635 640

Thr Ile Glu Tyr Asn Asp Ala Ala Gln Glu Ser Leu Ile Leu Gln Pro
645 650 655

Arg Lys Asp Leu Glu Ile Gly Glu Tyr Lys Ile His Leu Lys Leu Ala
660 665 670

Asp Asn Gln Asn Lys Asp Gln Val Thr Thr Leu Asp Val His Val Cys
675 680 685

Asp Cys Glu Gly Thr Val Asn Asn Cys Met Lys Ala Gly Ile Val Ala
690 695 700

Ala Gly Leu Gln Val Pro Ala Ile Leu Gly Ile Leu Gly Gly Ile Leu
705 710 715 720

Ala Leu Leu Ile Leu Ile Leu Leu Leu Leu Phe Leu Arg Arg Arg
725 730 735

Thr Val Val Lys Glu Pro Leu Leu Pro Pro Asp Asp Asp Thr Arg Asp
740 745 750

Asn Val Tyr Tyr Tyr Asp Glu Glu Gly Gly Gly Glu Glu Asp Gln Asp
755 760 765

Phe Asp Leu Ser Gln Leu His Arg Gly Leu Asp Ala Arg Pro Glu Val
770 775 780

Thr Arg Asn Asp Val Ala Pro Thr Leu Met Ser Val Pro Gln Tyr Arg
785 790 795 800

Pro Arg Pro Ala Asn Pro Asp Glu Ile Gly Asn Phe Ile Asp Glu Asn
805 810 815

Leu Lys Ala Ala Asp Ser Asp Pro Thr Ala Pro Pro Tyr Asp Ser Leu
820 825 830

Leu Val Phe Asp Tyr Glu Gly Ser Gly Ser Glu Ala Ala Ser Leu Ser
835 840 845

Ser Leu Asn Ser Ser Glu Ser Asp Gln Asp Gln Asp Tyr Asp Tyr Leu
850 855 860

Asn Glu Trp Gly Asn Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly
865 870 875 880

Gly Glu Asp Asp

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<211> 21

<212> DNA

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21

<210> 4

<211> 21

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gcctcatact cttctcgttg g

21

<210> 5

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<213> Rex1,size 930 bp,5'primer

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20

<210> 6

<211> 20

<212> DNA

<213> Rex1,size 930 bp,3'primer

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tcccatcccc ttcaatagca

20

<210> 7

<211> 20

<212> DNA

<213> Nanog,size 930 bp,5'primer

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20

<210> 8

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<213> Nanog, size 930 bp,3'primer

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<210> 9

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<213> GAPDH,size 858 bp,5'primer

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19

<210> 10

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<213> GAPDH, size 858 bp,3'primer

<400> 10

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<210> 11

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<213> NeuroD3, size 405 bp,5'primer

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19

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<213> NeuroD3, size 405 bp, 3' primer

<400> 12
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19

<210> 13
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<213> Sox1, size 407 bp, 5' primer

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<210> 14
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<400> 14
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19

<210> 15
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<213> T/Brachyury, size 528 bp, 5' primer

<400> 15
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20

<210> 16
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<400> 16
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tggccggctc tttcgcttac tg 22

<210> 19
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<213> beta-H1, size 415 bp, 5'primer

<400> 19
aacctcaat ggctgtgg 19

<210> 20
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<212> DNA
<213> beta-H1, size 415 bp,3'primer

<400> 20
tcagtgggtac ttgtgggaca gc 22

<210> 21
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<213> alpha-fetoprotein, size 997 bp,5'primer

<400> 21
tgctcagttac gacaaggtcg 20

<210> 22
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<213> alpha-fetoprotein, size 997 bp, 3'primer

<400> 22
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<210> 23
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<213> transthyretin, size 440 bp, 5'primer

<400> 23
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<210> 24
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<213> transthyretin, size 440 bp, 3'primer

<400> 24
tcagaggtcg ggcagcccag c

21